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<110> KYOWA HAKKO KOGYO CO., LTD.

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<150> JP 98/213823

<151> 1998-07-29

<160> 34 ✓

<170> PatentIn Ver. 2.0

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<212> PRT

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Thr Ile Leu Val Trp Val Trp Pro Phe Gly Gln Thr Phe Asp Leu Thr
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Ser Cys Gln Ala Met Phe Asn Ile Gln Gly Cys His Leu Thr Thr Asp
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Arg Ser Leu Tyr Asn Lys Ser His Ala Val Leu Ile His His Arg Asp
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Ile Ser Trp Asp Leu Thr Asn Leu Pro Gln Gln Ala Arg Pro Pro Phe
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Gln Lys Trp Ile Trp Met Asn Leu Glu Ser Pro Thr His Thr Pro Gln
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Lys Ser Gly Ile Glu His Leu Phe Asn Leu Thr Leu Thr Tyr Arg Arg
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Asp Ser Asp Ile Gln Val Pro Tyr Gly Phe Leu Thr Val Ser Thr Asn

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Pro Phe Val Phe Glu Val Pro Ser Lys Glu Lys Leu Val Cys Trp Val

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Val Ser Asn Trp Asn Pro Glu His Ala Arg Val Lys Tyr Tyr Asn Glu

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Tyr Leu Ser Phe Glu Asn Ser Ile His Lys Asp Tyr Ile Thr Glu Lys

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Ser Arg Glu Asn Tyr Glu Asn Tyr Ile Pro Ala Asp Ser Phe Ile His

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Val Glu Asp Phe Asn Ser Pro Ser Glu Leu Ala Lys Tyr Leu Lys Glu

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Val Asp Lys Asn Asn Lys Leu Tyr Leu Ser Tyr Phe Asn Trp Arg Lys

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Lys Met Lys Asn Phe Phe Ser Thr Lys Thr Asp Tyr Phe Asn Glu Thr

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Lys Ser Gly Ile Glu His Leu Phe Asn Leu Thr Leu Thr Tyr Arg Arg

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Asp Ser Asp Ile Gln Val Pro Tyr Gly Phe Leu Thr Val Ser Thr Asn

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Pro Phe Val Phe Glu Val Pro Ser Lys Glu Lys Leu Val Cys Trp Val

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Val Ser Asn Trp Asn Pro Glu His Ala Arg Val Lys Tyr Tyr Asn Glu

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Tyr Val Asn Asp Lys Asn Leu Ile Pro Thr Ile Ser Ala Cys Lys Phe

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Tyr Leu Ser Phe Glu Asn Ser Ile His Lys Asp Tyr Ile Thr Glu Lys

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Leu Tyr Asn Ala Phe Leu Ala Gly Ser Val Pro Val Val Leu Gly Pro

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Ser Arg Glu Asn Tyr Glu Asn Tyr Ile Pro Ala Asp Ser Phe Ile His

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Val Glu Asp Tyr Asn Ser Pro Ser Glu Leu Ala Lys Tyr Leu Lys Glu

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Val Asp Lys Asn Asn Lys Leu Tyr Leu Ser Tyr Phe Asn Trp Arg Lys
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Asp Phe Thr Val Asn Leu Pro Arg Phe Trp Glu Ser His Ala Cys Leu
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Met Lys Asn Phe Phe Ser Thr Lys Thr Asp Tyr Phe Asn Glu Thr Thr

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Ser Leu Tyr Asn Lys Ser His Ala Val Leu Ile His His Arg Asp Ile

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Ser Trp Asp Leu Thr Asn Leu Pro Gln Gln Ala Arg Pro Pro Phe Gln

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Lys Trp Ile Trp Met Asn Leu Glu Ser Pro Thr His Thr Pro Gln Lys

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Phe Val Phe Glu Val Pro Ser Lys Glu Lys Leu Val Cys Trp Val Val

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Ser Asn Trp Asn Pro Glu His Ala Arg Val Lys Tyr Tyr Asn Glu Leu

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Val Asn Asp Lys Asn Leu Ile Pro Thr Ile Ser Thr Cys Lys Phe Tyr

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Tyr Asn Ala Phe Leu Ala Gly Ser Val Pro Val Val Leu Gly Pro Ser

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gaa gat ttt aac tct ccc agt gag tta gca aaa tat ctg aag gaa gtt 1029

Glu Asp Phe Asn Ser Pro Ser Glu Leu Ala Lys Tyr Leu Lys Glu Val

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Glu Lys Trp Phe Trp Asn

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Phe Gly Gln Thr Phe Asp Leu Thr Ser Cys Gln Ala Met Phe Asn Ile
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caa gga tgc cat ctc aca acg gac cgt tca ctg tac aac aaa tcc cat 1600

Gln Gly Cys His Leu Thr Thr Asp Arg Ser Leu Tyr Asn Lys Ser His
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gca gtt ctg atc cat cac cga gac atc agt tgg gat ctg aca aat tta 1648

Ala Val Leu Ile His His Arg Asp Ile Ser Trp Asp Leu Thr Asn Leu
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Pro Gln Gln Ala Arg Pro Pro Phe Gln Lys Trp Ile Trp Met Asn Leu
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Glu Ser Pro Thr His Thr Pro Gln Lys Ser Gly Ile Glu His Leu Phe
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Asn Leu Thr Leu Thr Tyr Arg Arg Asp Ser Asp Ile Gln Val Pro Tyr
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Gly Phe Leu Thr Val Ser Thr Asn Pro Phe Val Phe Glu Val Pro Ser
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Lys Glu Lys Leu Val Cys Trp Val Val Ser Asn Trp Asn Pro Glu His
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Ala Arg Val Lys Tyr Tyr Asn Glu Leu Ser Lys Ser Ile Glu Ile His
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Thr Tyr Gly Gln Ala Phe Gly Glu Tyr Val Asn Asp Lys Asn Leu Ile

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Pro Thr Ile Ser Ala Cys Lys Phe Tyr Leu Ser Phe Glu Asn Ser Ile

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cac aag gat tac atc acg gaa aag cta tac aat gct ttt ctg gct ggc 2080

His Lys Asp Tyr Ile Thr Glu Lys Leu Tyr Asn Ala Phe Leu Ala Gly

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Ser Val Pro Val Val Leu Gly Pro Ser Arg Glu Asn Tyr Glu Asn Tyr

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att cca gca gat tca ttc att cat gtg gaa gat tat aac tct ccc agt 2176

Ile Pro Ala Asp Ser Phe Ile His Val Glu Asp Tyr Asn Ser Pro Ser

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gag cta gca aag tat ctg aag gaa gtc gac aaa aac aat aag tta tac 2224

Glu Leu Ala Lys Tyr Leu Lys Glu Val Asp Lys Asn Asn Lys Leu Tyr

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Leu Ser Tyr Phe Asn Trp Arg Lys Asp Phe Thr Val Asn Leu Pro Arg

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ttt tgg gaa tca cat gca tgt ttg gct tgc gat cat gtg aaa agg cat 2320

Phe Trp Glu Ser His Ala Cys Leu Ala Cys Asp His Val Lys Arg His

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caa gaa tat aag tct gtt ggt aat tta gag aaa tgg ttt tgg aat 2365

Gln Glu Tyr Lys Ser Val Gly Asn Leu Glu Lys Trp Phe Trp Asn

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agtataacaa ctgtctacgt gcttcccatg ataagtcttc tatattgaaa aatt atg 297

Met

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Thr Ser Thr Ser Lys Gly Ile Leu Arg Pro Phe Leu Ile Val Cys Ile

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aac agc tgg atc ttc agt cca atg gaa tca gcc agc tct gtg ctg aaa 441

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atg aaa aac ttc ttt tcc acc aaa act gat tat ttt aat gaa act act 489

Met Lys Asn Phe Phe Ser Thr Lys Thr Asp Tyr Phe Asn Glu Thr Thr

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att ctg gtg tgg gtg tgg cca ttt ggg cag acc ttt gac ctt aca tcc 537

Ile Leu Val Trp Val Trp Pro Phe Gly Gln Thr Phe Asp Leu Thr Ser

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Cys Gln Ala Met Phe Asn Ile Gln Gly Cys His Leu Thr Thr Asp Arg

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tca ctg tac aac aaa tcc cat gca gtt ctg atc cat cac cga gac atc 633

Ser Leu Tyr Asn Lys Ser His Ala Val Leu Ile His His Arg Asp Ile

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130 135 140 145

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Ser Gly Ile Glu His Leu Phe Asn Leu Thr Leu Thr Tyr Arg Arg Asp
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Ser Asp Ile Gln Val Pro Tyr Gly Phe Leu Thr Val Ser Thr Asn Pro
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Phe Val Phe Glu Val Pro Ser Lys Glu Lys Leu Val Cys Trp Val Val
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agt aac tgg aac cct gag cat gcc aga gtc aag tat tac aat gag cta 921

Ser Asn Trp Asn Pro Glu His Ala Arg Val Lys Tyr Tyr Asn Glu Leu

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agc aaa agc att gaa atc cat acc tac ggg caa gca ttt gga gaa tat 969

Ser Lys Ser Ile Glu Ile His Thr Tyr Gly Gln Ala Phe Gly Glu Tyr

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gtc aat gat aaa aat ttg att cct acc ata tct gct tgt aaa ttt tat 1017

Val Asn Asp Lys Asn Leu Ile Pro Thr Ile Ser Ala Cys Lys Phe Tyr

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ctt tcc ttt gaa aat tca atc cac aag gat tac atc acg gaa aag cta 1065

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Arg Glu Asn Tyr Glu Asn Tyr Ile Pro Ala Asp Ser Phe Ile His Val

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Phe Thr Val Asn Leu Pro Arg Phe Trp Glu Ser His Ala Cys Leu Ala

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Cys Asp His Val Lys Arg His Gln Glu Tyr Lys Ser Val Gly Asn Leu

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gagttctatc atttaagaga gcctaaataa aattatcatc aaggtattaa atataagacg 2421

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caatgcacat ttgttgatg aataaataaa tgcaattgaa ttcccagaaa aatgattgtt 2541

tcaaggaagt gacagttcta cttagaagt actaattgga gatgactttt atatccatt 2601

ttgtaatta ttcatacata gcacatatga ccatgatgtt cagggttta tagaaccaaa 2661

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<220>

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<210> 7

<211> 8

<212> DNA

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<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 7

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8

<210> 8

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

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ctggattcta tccagtgcaa ggcgagggtt tg

32

<210> 9

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 9

ctgaattctc atcgctggaa ccagtctgcc aag

33

<210> 10

<211> 31

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

<400> 10

ctgaattcac agcttctttg cagctccttc g

31

<210> 11

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<212> DNA

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<223> Description of Artificial Sequence: synthetic DNA

<400> 11

ctaagcttgt gtaaaacgca gtcagtaac ag

32

<210> 12

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<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 12

cagctgggat ctgactaact tacc

24

<210> 13

<211> 25

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

<400> 13

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25

<210> 14

<211> 24

<212> DNA

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<223> Description of Artificial Sequence: synthetic DNA

<400> 14

gatatcgctg cgctggctgt cgac

24

<210> 15

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

<400> 15

caagaaggaa ggctggaaaa gagc

24

<210> 16

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 16

gcttcttgac ggtgagcaca aatc

24

<210> 17

<211> 24

<212> DNA

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<223> Description of Artificial Sequence: synthetic DNA

<400> 17

tgcttggcca taggtgtgga tttc

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<210> 18

<211> 24

<212> DNA

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<223> Description of Artificial Sequence: synthetic DNA

<400> 18

gcttcttgac ggtgagcaca aatc

24

<210> 19

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

<400> 19

tgcttggcca taggtgtgga tttc

24

<210> 20

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 20

gattcccacc atatctactt gtaa

24

<210> 21

<211> 24

<212> DNA

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<223> Description of Artificial Sequence: synthetic DNA

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24

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20

<210> 23

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<223> Description of Artificial Sequence: synthetic DNA

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agttttccct agatggaccc

20

<210> 24

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ctgaattctg gctgggatcg ctttagaatg tg

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<210> 25

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<223> Description of Artificial Sequence: synthetic DNA

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32

<210> 26

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<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

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25

<210> 27

<211> 25

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

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25

<210> 28

<211> 891

<212> DNA

<213> Mouse

<400> 28

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<212> DNA

<213> Mouse

<400> 29

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tgctttccat gctatgttct ctacact 87

<210> 30

<211> 2036

<212> DNA

<213> Mouse

<400> 30

gaaaaattat gacatcaaca tccaaaggca ttcttcgccc atttctaata gtctgcatca 60

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tcagtccaat ggagtctgca agttctgtgc tgaaaatgaa aaatttcttc tccacaaaaa 180

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aaataatttc ctcttataac aataaaaaaa tgatatcttc aaatacaaat aaatgtataa	1920
attataccat ttatagaacg ctagttactt cattcatttg aaatatTTTT tccaaagcat	1980
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<210> 31

<211> 2056

<212> DNA

<213> Mouse

<400> 31

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tccatgacca ctttgtgtct tcaaattccag taccatctca aactagaggc aagaggcaga 180

gagcacacta tagatggtag aagatttttt taaaacctca tgcccaccct tactaacatg 240

cctcatctaa caaggtcata ttcccttaatt ctcccctaag agttgcaacc actggcaccc 300

aacaaaattt attagcctaa ggaggttcct ctactttaa ctactacact tataaaaaca 360

caatcaaagg atatgaaatt gaggtgggga tagggttaga ttatggaagg atttaggagg 420

tagggggtaa tatacatata tgtataaagc ccaaragtct caactatatg arrattatat 480

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ttattttatt tatttacatt taaaatgtaa atctgcccac gtgattccct ctccccttg 600

tctggaagtt tgtactttat taattctcag taaccacaat taattaaaca gtactgcca 660

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acaacatgtg ccccttctac cacatttacc acaaaccctt ccccaaaaaa ctacatcgta	1980
gagaatttgg gtccacagac aactctgccc ctctatttt agtttaattt taatcacccc	2040
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<220>

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24

<210> 33

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 33

acattgggtg gaaacattcc ag

22

<210> 34

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 34

tttgctacat caattagctc ccct

24